

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT K. DEHAVEN and
JAMES F. WENZEL

Appeal No. 2000-2294
Application 08/511,425

ON BRIEF

Before HAIRSTON, BARRETT, and RUGGIERO, Administrative Patent Judges.

RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal from the Examiner's stated final rejection of claims 59-78, which are the only claims remaining in the application.¹ Claims 1-58 have been

¹ We point out that a review of the record reveals that, through apparent misnumbering of the claims, there is no claim 63 or claim 64, although neither Appellants nor the Examiner

canceled.

The claimed invention relates to a test circuit for testing integrated circuits formed on a product wafer utilizing test circuitry formed on a stimulus wafer referred to as a circuit distribution wafer (CDW) in Appellants' specification. A face-to-face connection from the product wafer to the stimulus wafer is made through a compliant interconnect media. External connectors and conductors provided on the stimulus wafer transmit and receive test and control information to and from an external tester.

Claim 59 is illustrative of the invention and reads as follows:

59. A test circuit comprising:

a first plurality of input terminals and a first plurality of output terminals formed on a semiconductor substrate;

a plurality of buffers coupled between the first plurality of input terminals and the first plurality of output terminals on the semiconductor substrate, a portion of the first plurality of output terminals being coupled to a compliant interconnect media wherein the compliant interconnect media is a dielectric material having a plurality of conductive fibers formed therethrough;

has called attention to this fact in the Brief or Answer.

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a current sensing and blocking circuit for sensing current through one of the first plurality of inputs and electrically disconnecting the one of the first plurality of inputs from the compliant interconnect media if a predetermined current limit is exceeded, the current sensing and blocking circuit being formed on a semiconductor substrate;

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a voltage sensing and blocking circuit for sensing voltage through the one of the first plurality of inputs and electrically disconnecting the one of the first plurality of inputs from the compliant interconnect media if a predetermined voltage limit is exceeded, the voltage sensing and blocking circuit being formed on the semiconductor substrate;

a feedback circuit for receiving data from at least one of the voltage sensing and blocking circuit, the current sensing and blocking circuit, and the plurality of buffers, and using this data to provide test information, the feedback circuit being formed on the semiconductor substrate;

a temperature circuit coupled to the feedback circuit, the temperature circuit being used for receiving and processing temperature information, the feedback circuit being formed on the semiconductor substrate.

The Examiner relies on the following prior art:

Moriya	4,766,371	Aug. 23, 1988
Kwon et al. (Kwon)	5,070,297	Dec. 03, 1991
King et al. (King '405)	5,140,405	Aug. 18, 1992
Swapp	5,172,050	Dec. 15, 1992
Kreiger et al. (Kreiger)	5,210,485	May 11, 1993
Tuckerman et al. (Tuckerman)	5,397,997	Mar. 14, 1995
		(filed May 06, 1993)
King et al. (King '241)	5,440,241	Aug. 08, 1995
		(filed Mar. 06, 1992)
Charlton et al. (Charlton)	5,523,696	Jun. 04,

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1996
(filed Dec. 07, 1993)

All of the appealed claims stand rejected under 35 U.S.C. § 112, first paragraph, as being based on an inadequate disclosure under the enabling clause of the statute. Claims 69-78 stand rejected under 35 U.S.C. § 112, first paragraph, as being based on an inadequate disclosure under the written description provision of the statute. All of the appealed claims also stand rejected under 35 U.S.C. § 112, second paragraph, for failure to particularly point out and distinctly claim the invention. Lastly, all of the appealed claims further stand rejected under 35 U.S.C. § 103 as being unpatentable over Kwon or Swapp, in the alternative, in view of King '405, King '241, or Moriya, and further in view of Kreiger, Charlton, or Tuckerman.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the Brief (Paper No. 21) and Answer (Paper No. 22) for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the Examiner, the arguments

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in support of the rejections and the evidence of obviousness relied upon by the Examiner as support for the obviousness rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellants' arguments set forth in the Brief along with the Examiner's rationale in support of the rejections and arguments in rebuttal set forth in the Examiner's Answer.

It is our view, after consideration of the record before us, that Appellants' specification in this application describes the claimed invention in a manner which complies with the requirements of 35 U.S.C. § 112. We are also of the view that the claims particularly point out the invention in a manner which complies with 35 U.S.C. § 112, second paragraph. We are also of the conclusion that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in the appealed claims. Accordingly, we reverse.

We first consider the Examiner's 35 U.S.C. § 112, first paragraph, rejection of the appealed claims for "lack of enablement." In order to comply with the enablement provision

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of 35 U.S.C. § 112, first paragraph, the disclosure must adequately describe the claimed invention so that the artisan could practice it without undue experimentation. In re Scarbrough, 500 F.2d 560, 566, 182 USPQ 298, 305 (CCPA 1974); In re Brandstadter, 484 F.2d 1395, 1404, 179 USPQ 286, 293 (CCPA 1973); and In re Gay, 309 F.2d 769, 774, 135 USPQ 311, 316 (CCPA 1962). If the Examiner has a reasonable basis for questioning the sufficiency of the disclosure, the burden shifts to Appellants to come forward with evidence to rebut this challenge. In re Doyle, 482 F.2d 1385, 1392, 179 USPQ 227, 232 (CCPA 1973), cert. denied, 416 U.S. 935 (1974); In re Brown, 477 F.2d 946, 950, 177 USPQ 691, 694 (CCPA 1973); and In re Ghiron, 442 F.2d 985, 992, 169 USPQ 723, 728 (CCPA 1971). However, the burden is initially upon the Examiner to establish a reasonable basis for questioning the adequacy of the disclosure. In re Strahilevitz, 668 F.2d 1229, 1232, 212 USPQ 561, 563 (CCPA 1982); In re Angstadt, 537 F.2d 498, 504, 190 USPQ 214, 219 (CCPA 1976); and In re Armbruster, 512 F.2d 676, 677, 185 USPQ 152, 153 (CCPA 1975).

The Examiner asserts (Answer, pages 5 and 6) a lack of

enabling disclosure of the temperature sensing feature of Appellants' invention, particularly questioning the function of heating and cooling elements 80 and 82 in providing accurate temperature sensing results. As pointed out by Appellants (Brief, pages 12-14), however, the description at pages 12-16 of the specification in connection with Figures 3-6 of the drawings provides a detailed disclosure of the operation of the temperature sensing circuitry including the interrelationship of signals communicated between the temperature sensing circuitry 50, heating and cooling elements 80 and 82, and the external tester 104. It is our view, after reviewing the evidence of record, including Appellants' detailed description in the specification, that the level of skill relative to semiconductor wafer testing at the time of filing of Appellants' disclosure would enable the skilled artisan to implement the claimed temperature sensing operations without undue experimentation. Accordingly, we do not sustain the Examiner's rejection of the appealed claims under the enabling provisions of the first paragraph of 35 U.S.C. § 112.

Turning to a consideration of the Examiner's 35 U.S.C.

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§ 112, first paragraph, rejection of claims 69-78 based on the "written description" requirement of the statute, we note that the function of this requirement of the first paragraph of 35 U.S.C. § 112 is to ensure that the inventor has possession, as of the filing date of the application relied on, of the specific subject matter later claimed by him. In re Wertheim, 541 F. 2d 257, 262, 191 USPQ 90, 96 (CCPA 1976).

According to the Examiner (Answer, page 7), there is no original disclosure for the terminology "scribe lines" appearing in independent claim 69. We agree with Appellants (Brief, page 14), however, that the skilled artisan would recognize the lines depicting the delineation of plural die sites 34 on test wafer 16 in Figure 3 of the original disclosure as "scribe lines" which, as the evidence of record indicates, are known to define the spacing between die on a wafer. "It is not necessary that the application describe the claim limitations exactly, . . . but only so clearly that persons of ordinary skill in the art will recognize from the disclosure that appellants invented processes including those limitations." Wertheim, 541 F.2d at 262, 191 USPQ at 96 citing In re Smythe, 480 F.2d 1376, 1382, 178 USPQ 279, 284

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(CCPA 1973). In our opinion, under the factual situation presented in the present case, Appellants have satisfied the statutory written description requirement because they were clearly in possession of the claimed invention at the time of filing of the application. Therefore, the Examiner's rejection of claims 69-78 based on the "written description" requirement of the first paragraph of 35 U.S.C. § 112 is not sustained.

We also do not sustain the Examiner's indefiniteness rejection of all of the appealed claims under the second paragraph of 35 U.S.C. § 112. The general rule is that a claim must set out and circumscribe a particular area with a reasonable degree of precision and particularity when read in light of the disclosure as it would be by the artisan. In re Moore, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971). Acceptability of the claim language depends on whether one of ordinary skill in the

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art would understand what is claimed in light of the specification. Seattle Box Co. v. Industrial Crating & Packing, Inc., 731 F.2d 818, 826, 221 USPQ 568, 574 (Fed. Cir. 1984).

After reviewing the arguments of record, we are in agreement with Appellants (Brief, pages 14-16) that, contrary to the Examiner's assertion, there is no ambiguity or lack of clarity in the claimed terminology "output terminals" and "feedback." In our view, the skilled artisan would recognize the claimed "output terminals" as those located on the contact regions 32 of the test wafer which are in communication with the monitor and driving circuitry 34. Similarly, we agree with Appellants that no ambiguity exists in the use of the term "feedback" in relation to the claimed voltage and current blocking circuits since this circuitry clearly functions to route sensed signals back to the external test circuitry.

It is our view that the skilled artisan, having considered the specification in its entirety, would have no difficulty ascertaining the scope of the invention recited in the appealed claims. Therefore, the Examiner's rejection under the second paragraph of 35 U.S.C. § 112 is not

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sustained.

Lastly, we consider the Examiner's rejection of all of the appealed claims under 35 U.S.C. § 103. In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221

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USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

As indicated by the cases just cited, the Examiner has at least two responsibilities in setting forth a rejection under 35 U.S.C. § 103. First, the Examiner must identify all the differences between the claimed invention and the teachings of the prior art. Second, the Examiner must explain why the identified differences would have been the result of an obvious modification of the prior art. In our view, the Examiner has not properly addressed his first responsibility so that it is impossible that he has successfully fulfilled his second responsibility.

With respect to the appealed independent claims 59, 62, and 69, the Examiner has never attempted to show how each of the claimed limitations is suggested by the teachings of the applied prior art. Instead, the Examiner has taken the position (Answer, page 9) that Appellants' invention basically consists of three elements, a test wafer, an interconnect media, and a product wafer. To this basic combination of elements, the Examiner has added bits and pieces from various secondary references to address such features as temperature control and blocking circuitry. Nowhere, however, does the Examiner address the specific language of the claims. For

example, independent claim 59 includes a specific combination of input/output terminals, buffer circuitry, blocking circuits, feedback circuitry, and temperature control elements, all interconnected in a specific manner. Similarly, independent claim 62 includes a specific recitation of the monitoring of temperature information from subdivided distinct groups of test circuitry, while independent claim 69 includes a recitation of the processing of specific signals such as reset and clock signals. Rather than pointing to specific information in the applied references that would suggest their combination to meet the specific language of the appealed claims, the Examiner has instead described piecemeal similarities between each of the references and the claimed invention. Nowhere does the Examiner identify any suggestion, teaching, or motivation to combine the applied references, nor does the Examiner establish any findings as to the level of ordinary skill in the art, the nature of the problem to be solved, or any other factual findings that would support a proper obviousness analysis. See, e.g., Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1629-30 (Fed. Cir. 1996).

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We further note that even assuming, arguendo, that the recited limitations of the appealed claims are found in various ones of the prior art references, the Examiner's rejection is totally lacking in any rationale as to how and why the skilled artisan would modify the prior art to arrive at the claimed invention. We are left to speculate why one of ordinary skill would have found it obvious to modify any of the applied prior art to make the combination suggested by the Examiner. The only reason we can discern is improper hindsight reconstruction of Appellants' claimed invention. Accordingly, because the Examiner has not established a prima facie case of obviousness since all of the limitations of the appealed claims are not taught or suggested by the applied prior art, the Examiner's 35 U.S.C. § 103 rejection is not sustained.

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In summary, we have not sustained any of the Examiner's rejections of the claims on appeal. Therefore, the decision of the Examiner is reversed.

REVERSED

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
LEE E. BARRETT)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
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